DOCUMENT RESUME

ED 189 521 CG 014 546

AUTHOR Wampler, Larry D.: Amira, Stephen B.
TITLE Transcendental Meditation and Assertive Training in the Treatment of Social Anxiety.
PUB DATE 7 May 80
NOTE 31p.: Paper presented at the Annual Meeting of the Western Psychological Association (60th, Honolulu, HI, May 5-9, 1980).

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Anxiety: *Assertiveness: College Students: Higher Education: Individual Development: Interpersonal Competence: *Program Effectiveness: *Relaxation Training: *Self Help Programs: *Social Adjustment: Social Isolation: Stress Variables: Training Methods
IDENTIFIERS *Transcendental Meditation

ABSTRACT

Research indicates that transcendental meditation (TM) may provide relief from accumulated stress and render the meditator better able to cope with future stressful events. Single and combined TM and assertive training programs were compared for effectiveness in the treatment of socially anxious college students. A waiting-list group served as the control. College students (28 females and 12 males) participated in one of the four programs, completed the College Self-Expression Scale, the Assertion Inventory and selected scales of the Minnesota Multiphasic Personality Inventory, and collected daily self-observations of personally targeted assertive behaviors. Pre-post changes for meditation subjects were significantly superior to the control group on all self-report measures, suggesting an increase in assertiveness and reductions in situational and trait anxiety, general dysphoria, and social isolation. For the assertive training group, only the indices of assertive behavior showed changes significantly exceeding waiting-list results. The combined treatment was less effective, perhaps due to inordinate demands of the intensive training regimen. All three treatment groups observed significant pre-post increases in their ability to assert themselves in targeted situations, but these changes were not reliably greater than for waiting-list subjects. (Author)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED189521

Transcendental Meditation and Assertive Training in the Treatment of Social Anxiety[1]

Larry D. Wampler[2] and Stephen B. Amira

Vanderbilt University

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Larry Wampler

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CG 014546

1 Paper presented at the 60th Annual Meeting of the Western Psychological Association in Honolulu, Hawaii, May 7, 1980.

2 Currently at UCLA Psychological and Counseling Services.

Transcendental Meditation and Assertive Training

in the Treatment of Social Anxiety

The following study was undertaken to investigate the effects of Transcendental Meditation (TM) and Assertive Training (AT), both alone and in conjunction, for the treatment of social anxiety among college students. It was hypothesized that while both programs may have limitations, they are perhaps well-suited to complement each other in this context.

Review of TM Research

Abundant evidence indicates that the general relaxation response elicited by the practice of TM is antithetical to the psychophysiological experience of anxiety (Wallace, 1970; Wallace, Benson & Wilson, 1971; Wallace & Benson, 1972). Orme-Johnson (1973) compared stress responses of meditators and non-meditators, leading to the conclusion that TM may provide relief from accumulated stress, and render the meditator better able to cope with future stress without undue arousal.

This view of meditation as an antidote to stress has stimulated exploration of the psychotherapeutic potential of TM. Several studies have suggested that TM may reduce general anxiety and foster personal development among normal subjects (Seeman, Nidich & Banta, 1972; Nidich, Seeman & Dreskin, 1973; Hjelle, 1974). Adequate controls have been lacking in most designs, however. In a review of the meager literature on meditation as psychotherapy, Smith (1975) cited motivation, expectation,

and simple quiet sitting as prominent confounding variables.

Ferguson and Gowan (1976) sought to control for motivation and expectation effects by comparing TM to an encounter-group class. Adopting a slightly different approach to the problem of experimental control, Glueck and Stroebel (1975) measured the incremental improvement of patients who received TM training in addition to regular psychiatric treatment. Both studies produced outcomes favorable to TM, but the failure to employ random assignment to treatments renders the verdicts suspect.

Despite these methodological flaws, the evidence suggests that TM provides at least symptomatic relief from anxiety. Because the TM program includes no deliberate training in interpersonal skills, any impact on behavioral nonassertiveness would have to occur by means of an indirect pathway. For example, as general anxiety diminished, a client might risk lowering social defenses, thereby allowing the natural emergence or development of greater assertiveness. Even in the absence of any such propitious course of events, TM might prove useful as an adjunct to other forms of therapy that would provide direct training in behavioral skills.

Review of AT Research

In contrast to the possible non-specific anxiety-reducing effects of TM, assertive training is designed to remedy specific social skill deficits which are presumed to underly interpersonal anxiety. Although

the various training regimens may be described in varying theoretical language, all share the same explicit goal: "the spontaneous expression of personal rights and feelings, both positive and negative, in a socially acceptable manner" (Percell, Berwick, & Beigel, 1975, p. 502).

The research record for AT is impressive relative to the TM studies. Investigations by McFall and Marston (1970), Hedquist and Weinhold (1970), Rathus (1972), Galassi, Galassi and Litz (1974), Percell, et al (1974) and Galassi, Kosta and Galassi (1975) have employed randomized assignment, placebo and/or waiting-list control comparisons, creative attempts to consensually validate self-report data, and (in two instances--with mixed results) follow-up assessments. Taken together, these studies of AT indicate that even brief treatment results in (1) at least short-term changes in social behavior, and (2) a self-reported reduction of attendant situational anxiety. The studies measuring the effect of AT on trait anxiety arrived at conflicting conclusions.

The failure to reduce trait anxiety is the less surprising outcome, theories of generalization notwithstanding. Development of assertive skills may, understandably, improve performance and reduce associated situational anxiety. However, it would be naive to expect this or any other set of new behaviors to completely deal with a presumably complex set of anxieties, some of which may be an unavoidable part of living.

Thus, it can be seen that AT and TM might effectively complement each other: AT equips the client to avert an easily targeted set of anxieties, while TM increases the stress threshold and helps to neutralize

the effects of residual sources of anxiety.

METHOD

Subjects

Forty-eight Vanderbilt University and Peabody College students, age 18-26, were recruited as subjects via posters, campus newspaper announcements and flyers distributed in student mailboxes. The advertisements solicited participants for a training program aimed at helping them to become more outgoing and less fearful or shy in social interactions. Treatment was offered under the aegis of the Interuniversity Psychological and Counseling Center.

All respondents to the advertisements were administered the Minnesota Multiphasic Personality Inventory (MMPI) and the College Self-Expression Scale (Galassi, Debo, Galassi, & Bastein, 1974) in order to screen for severe psychological disturbance and minimal levels of nonassertiveness, respectively. An individual interview, conducted by the experimenter, was scheduled for any volunteer whose MMPI profile contained a single T-score above 80, or a configuration suggesting psychosis (e.g., 8-7) or severe personality disorder (e.g., 4-6).

Identification of social anxiety as a primary problem was required in order to gain admittance into the program. The presence of other complicating issues was allowed, so long as no evidence of suicidal inclination, psychotic tendency or personality defect was present to suggest risks resulting from the stress of training, or indirectly from

the delay of more intensive treatment. Taking these factors into consideration, the decision for or against inclusion ultimately rested upon the clinical discretion of the interviewer. Eleven subjects gained admittance into the study via this route. Approximately equal numbers were excluded on the basis of the interview.

Prospective subjects were also required to score below the average for college students on the College Self-Expression Scale (CSES), a 50-item behavioral self-report inventory of assertiveness. Applicants who failed to meet the selection criteria were offered alternative treatment (individual or group therapy) through the Interuniversity Psychological and Counseling Center.

Dependent Variables

In addition to serving as selection criteria, the MMPI (scales 2, 7, and 0) and the CSES were used to evaluate outcome. Assessment instruments also included the Assertion Inventory (Gambril & Richey, 1975) and a record of targeted assertive behaviors performed by each subject outside of the training sessions.

MMPI scales 2 ("Depression"), 7 ("Psychasthenia") and 0 ("Social Introversion") were selected largely on the basis of their face validity for an investigation of social anxiety and non-assertiveness.

The CSES taps three dimensions of assertiveness: (1) positive assertion (expression of affection, approval, etc.); (2) negative assertion (expression of anger, disagreement, etc.); and (3) self-denial

(excessively apologetic attitude, exaggerated concern for others) vis-a-vis a variety of role occupants. Acceptable reliability and validity statistics are reported in Galassi et al. (1974) and Galassi and Galassi (1974).

The Assertion Inventory asks the respondents to estimate both (1) the probability that they would respond assertively in a variety of social situations (much like on the CSES), and (2) the degree of concomitant subjective discomfort they would experience. A slightly modified version of the Assertion Inventory was also used to obtain independent peer ratings of how each subject reacts in social situations. These ratings were made in confidence, with the subject's prior approval.

Following the example set by Hedquist and Weingold (1970), each subject was asked to select five situations from the Assertion Inventory for special attention in learning to behave more assertively. These items were listed in a small spiral notebook that served as a journal in which the subject recorded the occurrence of these behaviors. Subjects were instructed to make daily journal entries, briefly noting occasions for targeted assertive actions, and whether or not they responded assertively. From these raw data, a weekly proportion of assertive replies was computed for each subject. Data were collected continuously through one week of baseline and six weeks of treatment.

The collection of measures outlined above provides three types of information: (1) a semi-objective count of target assertive behaviors; (2) paper-and-pencil self-reports of assertiveness, trait anxiety,

situational anxiety (specific to social interactions), depression and social introversion; and (3) peer ratings of assertiveness and situational anxiety.

Procedure

Subjects who qualified for participation were assigned randomly (within the limits imposed by scheduling constraints, and an attempt to equalize cell-size) to the following conditions: (1) training in TM, (2) group training in assertive skills, (3) combined treatment (CB) involving TM plus AT, and (4) waiting-list (WL) control. Applicants to the program were informed of the treatment alternatives, and that their assignments would be determined randomly. The possibility of a waiting list was also foreshadowed.

Recruitment efforts fell short of providing sufficient numbers of participants to fill the entire design at a single time. Consequently, the study was conducted in four "batches" over a two-year period. Thus, treatments and batches were partially confounded: Two batches were comprised entirely of subjects belonging to a single experimental group (although other batches contributed additional members); all of the WL subjects came from the final batch (although assignments to other experimental groups were also made from this pool). Drop-outs were replaced in subsequent batches, resulting in a design that was ultimately balanced with ten subjects in each cell. Each group contained more females than males.

Three male-female pairs of clinical psychology graduate students were selected to co-lead the three AT groups. These leaders were in their second or third year of training, except for one who was a psychology intern. One member of each pair had previous AT experience. In every case, the other partner had at least some prior service as a therapy group leader. All exhibited considerable enthusiasm about the program. The leaders were furnished background readings on AT, and an agenda for each group meeting, specifying structured exercises and discussion topics. They were otherwise allowed latitude to conduct the sessions according to their clinical judgment and personal styles. The experimenter conferred periodically with the leaders to monitor group development and to offer supervision as needed. Insofar as possible, group leaders were kept "blind" to subjects' experimental identity.

The AT groups met weekly for six weeks, with each session lasting about two hours. The first session provided a general introduction and established expectations of how the training would proceed. Particular emphasis was placed on distinguishing between assertiveness and aggressiveness. The next three sessions, respectively, focused on saying "No" to unreasonable requests, making simple statements of preference, and making more complex requests for behavior change. During the fifth session, trainees continued practicing these skills, with special attention given to individual problems. The final session was devoted to

summarizing and processing the group experience.

TM training was provided by qualified instructors from the Nashville Chapter of the International Meditation Society. Again, as in the case with AT, care was taken to insure that each instructor trained approximately equal numbers of subjects from the two experimental groups receiving the treatment. Variability among instructors poses very little threat for the TM condition, however. The training procedures are rigorously standardized (word-for-word during the key, individual initiation) and the instructors adhere to the guidelines religiously. A reduced tuition fee was paid by the experimenter from research and Counseling Center funds, so that research participants received treatment free of charge.

The regular course of TM training includes two introductory lectures, one individual instruction session, and two, two-hour group discussions of the meditation experience. The introductory lectures impart a calculatedly inspirational overview of meditation. Individual instruction begins with a brief devotional service in honor of Guru Dev (the Maharishi Mahesh's mentor). Subsequently, the initiate is given a "personal" mantram (a Sanskrit word) and instructed in its proper use.

The initiate is then left alone to meditate for a few minutes. By and by, the instructor returns and inquires into what transpired, correcting any misconceptions uncovered. Some of the questions are almost rhetorically suggestive of a favorable experience, taking the general form, "Wasn't it pleasant and easy?" Finally, the pupil is instructed to meditate for two

twenty-minute periods each day, before breakfast and dinner. Two group discussion meetings follow during the next few days. These sessions serve as a review of the earlier instructions, and provide a forum for testimonials. Serious criticisms and adverse reactions (e.g., recurrent unpleasant thoughts or headaches) are respectfully deemed to warrant individual attention at the end of the meeting, and are thereby prevented from infecting the carefully cultivated tone of encouragement and optimism.

The regular TM program was slightly extended for the participants in this investigation. In order for the TM subjects to receive an amount of professional contact equivalent to the AT program, two additional group discussions were held, at intervals of about two weeks. (Obviously, the combined treatment involved twice as much professional time--an inherent confound.)

At the end of the experimental period, all subjects again filled out the CSES, the Assertion Inventory, and the MMPI, and turned in their behavioral self-monitoring journals. A second peer-rating was also requested, again using the modified Assertion Inventory. WL subjects were offered assertive training after the data collection was completed.

Approximately six months after the end of training, a packet of follow-up materials (CSES, Assertion Inventory, and a request for an additional week of behavioral self-monitoring data) was sent to each of the subjects in the three treatment conditions. Subjects who had received TM training were also polled regarding their current practice of meditation.

RESULTS

Data from each of the paper and pencil measures (i.e., CSES, Assertion Inventory: Response Probability and Discomfort, and MMPI Scales 2, 7, and 0) were subjected to a 2 X 2 (TM X AT) completely randomized factorial analysis of covariance, with the pretreatment scores serving as the covariate (Huck & McLean, 1975). Means and standard deviations of the raw change scores are presented in Table 1.

Insert Table 1 about here

Analysis of the CSES scores yielded main effects for both TM ($F_{1, 35} = 12.53$, $p < .005$) and AT ($F_{1, 35} = 4.24$, $p < .05$). However, none of the F-tests reached significance on the next variable, Response Probability, even though it ostensibly measures the same dimension. A priori comparison of AT and CB with WL were calculated using the technique developed by Dunn. Both treatments were shown to be significantly superior to the control group ($p < .05$ for AT; $P < .025$ for CB; both one-tailed). The TM subjects registered equivalent gains, but due to the fact that no hypothesis was advanced for this treatment, application of the same method was not statistically permissable.

The data for subjective Discomfort assume a configuration, as illustrated in Figure 1, that will be seen to repeat itself for the MMPI

Insert Figure 1 about here

TREATMENTS

Dependent Variables	CB	AT	TM	WL
CSES	38.0 (25.19)	27.8 (18.16)	33.5 (19.16)	6.7 (12.09)
Response Probability	21.4 (11.58)	19.8 (14.05)	20.0 (12.26)	7.5 (14.52)
Subjective Discomfort	20.2 (13.51)	28.8 (23.95)	37.7 (24.22)	13.0 (18.97)
MMPI Scale 2 (D)	9.8 (10.41)	9.5 (11.74)	15.7 (10.78)	1.1 (4.68)
MMPI Scale 7 (Pt)	7.3 (10.21)	4.8 (8.26)	12.1 (7.49)	-1.8 (6.36)
MMPI Scale 0 (Si)	7.3 (6.86)	9.4 (5.62)	13.4 (6.24)	1.5 (5.68)

Table 1. Mean Positive Change Scores
(Standard deviations in parentheses)

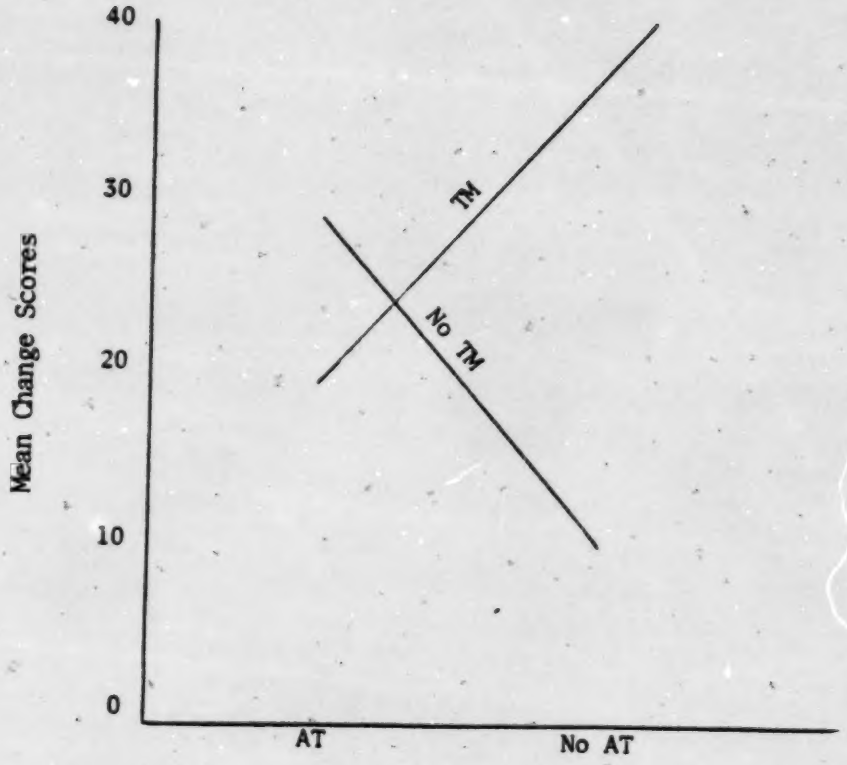

Figure 1. Subjective discomfort.

variables: TM produced results considerably superior to no-treatment, with AT and CB falling roughly midway between these two extremes. This outcome is reflected in the analysis of covariance, which shows a main effect for TM ($F_{1, 35} = 5.84$, $p < .05$) and a highly significant treatment interaction ($F_{1, 35} = 10.07$, $p < .01$). All possible pairwise comparisons between the four adjusted cell means were examined, using Tukey's Honest Significant Difference (HSD) statistic. Only the difference between TM and WL attained significance ($p < .01$). The comparisons of AT with the control group, and TM with CB produced appreciable differences, but failed to reach significance. In this case, and others where AT and CB came close to attaining significance, Dunn's (less stringent) test was also computed. The outcome invariably remained the same, however.

A similar result obtained for Scale 2 (D) of the MMPI. In the overall analysis, a main effect for TM fell slightly short of acceptable reliability ($F_{1, 35} = 3.65$, $p < .10$), but the treatment interaction was significant ($F_{1, 35} = 5.56$, $p < .05$). Only TM was found to be statistically superior to WL ($p < .05$).

On Scale 7 (Pt) of the MMPI, the analysis of covariance showed a main effect for TM ($F_{1, 35} = 8.16$, $p < .01$) and a significant interaction ($F_{1, 35} = 4.53$, $p < .05$). Again, the comparison of TM and WL was the only one to exceed Tukey's HSD ($p < .01$), although the difference between CB and WL approached significance.

The final questionnaire self-report variable, MMPI Scale 0 (Si), showed only a slight departure from this pattern. The familiar main

effect for TM ($F_{1, 35} = 6.46$, $p < .025$) and treatment interaction ($F_{1, 35} = 12.24$, $p < .01$) were present in the analysis of covariance summary. In this case, however, two significant comparisons were discovered. The difference between TM and WL exceeded Tukey's HSD at $p < .01$. Moreover, the $p < .05$ level of significance was attained (exactly) for the comparison of AT with the control group. The results for TM were substantially superior to CB, but fell short of statistical significance.

Parallel analyses were planned for the peer-ratings of Response Probability and Discomfort. However, a meaningful analysis was precluded by the low return rate of the peer questionnaires. Pre-post ratings were secured for only 23 of the 40 subjects who completed the study: nine, seven, five and two for CB, AT, WL, and TM, respectively.

The data matrix was also incomplete for the behavioral self-monitoring variable. One CB subject and three WL subjects failed to maintain their journals. In the latter case, this loss of data is probably attributable to the nature of the treatment since subjects who were still awaiting treatment presumably felt less commitment to the project and less motivation to collect data than the subjects who were participating actively.

Taking this factor into consideration, a least-squares, split-plot factorial 2 X 2 X 7 (TM X AT X Weeks) analysis of variance was performed on the behavioral self-monitoring data. The only significant outcome

was a main effect ($F_{6, 182} = 6.94$, $p < .01$) for weeks. Figure 2 provides some insight into this result. Each of the treatment groups shows general improvement, despite uninterpretable fluctuations in weeks 3-5. The averages for the WL control group remain essentially unchanged across the graph, but mysteriously originate at a level comparable to the post-treatment results for the other groups.

Dunn's multiple comparison procedure was selected to perform a set of seven a priori, non-orthogonal comparisons among the means plotted in Figure 2.

Insert Figure 2 about here

First, for each experimental condition, the baseline mean was compared to the mean for the final week of treatment. As anticipated from inspection, these differences (using table entries for one-tailed tests) were significant for CB ($p < .005$), TM ($p < .025$) and AT ($p < .05$), but not for WL. Next, the pre-post difference for each treatment was compared to the pre-post difference for the control group. None of these tests yielded a significant outcome. Substantially larger differences would have been required to achieve statistical reliability.

Follow-up

Exactly 50% of the follow-up questionnaires were returned (six from the CB group, five from TM and four from AT). These data were too meager

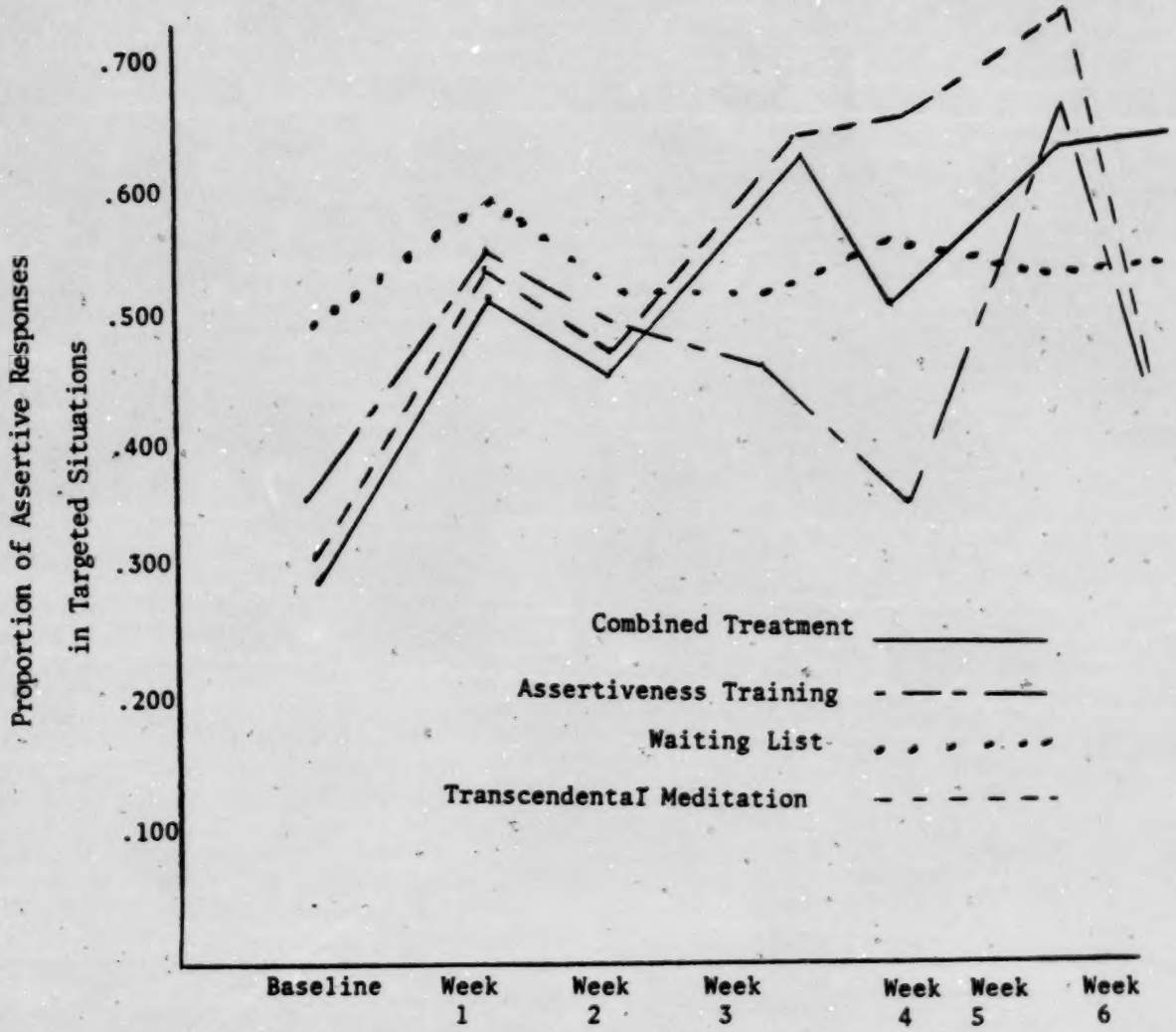

Figure 2. Behavioral self-monitoring.

to warrant statistical analysis, but the figures were encouraging, nevertheless. On all three self-report indices (CSES, Discomfort and Response Probability) the CB subjects generally maintained the gains that were in evidence at termination. One subject reported a marked delayed reaction in the reduction of Discomfort. The TM subjects, as a group, showed modest additional improvement during the follow-up period, although one subject suffered notable attenuation of his earlier gains. All four AT subjects who responded at follow-up displayed slight losses on one or more measures, but in most instances the declines were negligible. The CB and TM groups reported further gains in actual assertive behavior, as reflected in their behavioral self-monitoring. The proportion of assertive actions jumped an average 21 additional percentage points among the CB subjects, nearly rivaling the improvement that occurred during the experimental period. The TM subjects did almost as well, boosting their average by 16 percentage points. One of the four reporting AT subjects showed improvement on this measure at follow-up, but the other three declined slightly from their immediate post-treatment levels.

DISCUSSION

The apparent superiority of TM stands in sharp contrast to the expectation of differential ordering of the treatments' effectiveness from one variable to another. TM emerges as the unmistakable "winner"

on the four subjective self-report variables, with improvement roughly equal to AT and CB on the three more behavioral indices. Indeed, graphs representing the MMPI variables could be displayed proudly in a promotional brochure for the TM organization. It must be kept in mind that in no case did the discrepancy between TM and the other two treatments reach statistically significant proportions. However, as Figure 1 vividly portrays, the advantage of TM over the other treatments is often as great as their relative edge on the control group. This pattern is reflected statistically on three variables (Discomfort and MMPI scales 2 and 7) for which the juxtaposition of TM and WL constitutes the sole significant comparison between groups.

Clearly, the TM program accomplishes more than merely quelling anxiety. It appears to instill at least a higher self-estimate of interpersonal effectiveness (CSES, Response Probability, behavioral self-monitoring) and contributes to the alleviation of feelings of social isolation (MMPI Scale 0). The magnitude of improvement on the MMPI--averaging nearly 16 T-scale points on Scale 2, for example--is remarkable considering the brevity of the pre-post interval.

By comparison, the results for AT are disappointing. Despite the report of behaving more assertively, the AT subjects seemed to feel relatively substantial residual anxiety in situations calling for an assertive response.

Potential Confounds and Discrepancies

Rival explanations for the outcome arise from the method of collecting data in batches. That is, a different set of extraneous variables might have impinged on the subjects, depending on the semester in which they participated in the study. Some efforts were made to minimize this problem, so that no entire experimental group was confounded with an entire batch. Furthermore, each batch of subjects was timed to run through about the same period of the academic schedule; all pre-treatment measures were collected early in the school semester, and all post-treatment evaluations fell near the end of the term, about two weeks before final examinations. No other obviously confounding "historical" factors (such as a shift in the campus Zeitgeist) are immediately apparent, but neither can such possibilities be decisively ruled out.

Differences between the AT and TM leaders present a more serious threat to the validity of the study. In comparison to the AT leaders, TM instructors were clearly more experienced at their craft, and devoted to its propagation. Consequently, they might have generated more hope among their subjects, introducing a powerful therapeutic factor quite independent from the actual practice of meditation.

The behavioral self-monitoring data were collected in hopes of providing consensual validation of the subjective self-report measures, and indeed, the group means suggest some agreement. However, this is not borne out at the individual level, as indicated by a Pearson product-moment

correlation of only .371 between the subject's estimates of assertive potential (CSES) and their behavioral self-observations. This coefficient is significantly different from zero ($p < .025$), but the magnitude is nonetheless unimpressive. An assertive self-concept may be a wholesome attitude and a worthy treatment goal in its own right. Apparently, though, it is largely independent of behavioral assertiveness; the low correlation reflects the fact that some of the subjects who made the largest gains on one dimension showed minimal improvements on the other.

Follow-up

The results obtained at follow-up mirror the Lieberman, Yalom and Miles (1973) encounter group findings in two important respects: First, the appeal for follow-up information elicited a response from subjects at all levels of therapeutic accomplishment, in rough proportion to their numbers in the earlier distribution; this lends credence to the assumption that they are a representative sub-group, and not skewed in favor of the more enthusiastic, high-gain end of the spectrum. Secondly, the scores obtained immediately after treatment appear to be good predictors of status at follow-up. This latter conclusion finds clear support in between-group comparisons. The TM and CB subjects generally maintained or improved upon their initial gains, whereas the AT subjects lagged behind in both assessments. Behavioral changes during the follow-up interval were especially impressive. TM and CB subjects built upon their earlier advances, attaining a highly

respectable assertive response rate of approximately 75% in situations that had been targeted as problematic when they begin treatment.

Surprisingly, these improvements cannot be attributed to any salutary effect of continued meditation. Of the ten CB and TM subjects who responded at follow-up, only one claimed to have persisted in the regular, twice-daily practice of meditation--and his additional gains were not outstanding. Likewise, of the two subjects who said they still meditated "often" (usually at least once per day) one improved and the other did not. Three of the ten had discontinued TM entirely, and the remaining four meditated only "occasionally" (a few times each week) or "seldom" (rarely, perhaps, during times of stress). On the whole, meditation was not established as an enduring habit among these subjects. Follow-up outcomes appear to be totally independent of this factor.

Poor Outcome for the Combined Treatment

At this juncture, a consideration of the disappointing results for the CB treatment is in order. The outcome for CB (like that of AT) measured up to TM on only three of the seven dependent variables. These were the CSES, Response Probability and Behavioral Self-Monitoring--the variables designed to assess the subjects' self-evaluation of behavioral change. However, CB was notably less successful in alleviating emotional distress, as gauged by Discomfort and MMPI scales 2, 7, and 0. In the latter instance, the superiority of TM approached statistical significance, utilizing

conservative a posteriori tests. These results are bewildering, considering that TM comprises half of the CB package. How could the addition of AT produce a decline in the effectiveness of TM? Or, posing the question another way, why did the addition of TM fail to increment the AT results?

The differential drop-out rate observed for the experimental conditions presents a promising point of departure in the search for an explanation. Five subjects withdrew from the TM treatment, as compared to only one for each of the other cells in the design. Why did more TM subjects desert treatment, and how might these departures have left this group different from the others?

It will be recalled that, within certain limitations, subjects were assigned randomly to treatments. Most students volunteered for the program seeking any reasonable help for their social anxiety. A few others came with a definite preference for AT or (in roughly equal numbers) TM. Notwithstanding an occasional expression of disappointment, everyone was provided with a plausible rationale, and in no case was an assignment refused. (After all, the subjects were nonassertive and the experimenter was highly motivated.) In most cases, AT was more readily accepted, owing to its obvious face validity. Persuading subjects that TM would remedy their shyness sometimes proved to be a formidable task, however.

It is reasonable to assume that the TM assignees who eventually retired from participation were those whose initial indisposition towards TM was confirmed in training and practice. Some subjects assigned to CB undoubtedly

held similar reservations about meditation, but they had the assertive training to hold them in the program. By a process of natural attrition (either complete resignation or partial involvement) the entire pool of experimental subjects probably tended to be practicing a method that was personally compatible, random assignment notwithstanding.

In order for TM to be palatable, a person must be willing to accept, or at least tolerate, the nearly "religious" belief requirement which forms a strong undercurrent in the TM course. Several of those who dropped out complained that TM was inimical to their religious beliefs. Others seemed to find it repugnant because of its nonrational (or pseudo-rational) foundations. Thus, the ten who finally accepted this treatment were amenable to the imposition of a demand for faith in a new belief system. To this extent, placebo effects may have been more operative in the TM condition than in CB or AT.

This underscores the precept that a client will respond to treatment in proportion to the amount of enthusiasm and hope that can be generated. The TM program endeavors to systematically instill these attitudes, and furthermore applies pressures--subtle and otherwise--towards that end. TM may be the treatment of choice for socially anxious college students if they find the belief system congenial, but many do not. AT, on the other hand, seems to produce more modest results, but has wider applicability, perhaps because it requires a lesser commitment of faith.

Another interpretation of the relatively poor CB outcome is likely to be proffered by the true believers in the TM organization. They might

emphasize that meditation is a complete remedy in its own right, so that any addition could only be expected to dilute its potency. Despite the repugnantly antiacademic overtones contained in such purist thought, it may have some oblique merit in this case. The combined treatment made such extraordinary demands on the participants' time (an average 6-½ hours per week) that their enthusiasm, and perhaps their involvement, may have dwindled. Some meager evidence can be mustered in support of this view. A few subjects in the CB and TM groups were asked to chart the frequency of their meditations. Of those who responded (numbering only four and two, respectively), the recipients of combined treatment reported meditating only 55% of the prescribed number of times, in comparison to 90% for the TM-only subjects. The reliability of these figures must be regarded with caution, but they are intuitively credible, and constitute one of the few straws available for grasping.

Whatever the explanation for the superiority of TM relative to CB, it is clear that the effects of AT and TM are not additive. It is, at best, inefficient to offer this treatment combination to busy college students who probably lack the time to utilize both programs simultaneously.

The differential drop-out rate also raises practical considerations. What criteria could be employed to identify clients receptive to TM? Might they be less rigid and defensive, for example? In this sample, the satisfied TM subjects were not readily distinguishable from the other groups on the basis of any of the data collected. (This includes the L scale and F-minus-K on the MMPI, which are commonly employed to interpret

rigidity and defensiveness.) Fortunately, the issue is easily resolved in practice, by merely inquiring into the applicant's preferences. If TM sounds appealing and relevant, it will probably be helpful.

Etiology of Social Anxiety

Taken together, the findings of this investigation have implications for understanding the etiology of social anxiety among college students. One model, out of which AT developed, postulates that deficient social performance results from never having learned the requisite interpersonal skills; the aversive consequences of ineptitude elicit anxiety. A remedial skills program such as AT might be considered the obvious treatment choice in cases where this model is believed to apply. An alternative sequence begins with social anxiety (traceable to fundamental insecurities or some interpersonal conflict) which then inhibits spontaneous expression and action, resulting in constricted social performance. The development of social skills is seen as incidental.

The anxiety inhibition model is clearly more in keeping with the results of this study. The remarkable improvement of the TM subjects, as reflected in both emotional and behavioral self-reports, evolved without one whit of remedial coaching in social conduct. Apparently, the behavioral skills were in their possession, but inaccessible due to the overlaying anxiety. The AT subjects did indeed report behavioral changes, but experienced only small reductions in either situational or general distress.

Generalization of these conclusions must be tempered by granting due consideration to the characteristics of the experimental sample. It might

be reasonable to expect, for example, that the anxiety-inhibition pathway to social anxiety would be more prevalent in this young, intelligent, largely upper-middle class population than among older clients with less education and social opportunity. Furthermore, it is questionable to what extent the participants in this study should be regarded as a clinical sample. They were, in fact, volunteers for a special program, despite the selection criterion of moderate social anxiety. In probably no more than half the cases were their difficulties so disabling that conventional therapy might have been sought had they lacked this express opportunity. Thus, a sample drawn from applicants at a mental health clinic might possess, among other divergent qualities, a higher motivation.

Conclusions

On the basis of this investigation, TM certainly merits further evaluation as an adjunct or alternative to standard psychological treatment. However, several of the findings raise the distinct possibility that much of the potency of TM lies not in the practice of meditation, per se, but in the power of the instructors to inspire uncritical faith in a mystique that promises answers to all of life's problems. Additional research is needed to identify the prime components and to determine who might profit from them. In the meantime, the technique should be used with due consideration.

REFERENCES

Ferguson, P.C., and Gowan, J.C. Psychological findings on transcendental meditation (TM): Some preliminary findings. Journal of Humanistic Psychology, 1976, 16, 51-60.

Galassi, J.P., DeLo, J.S., Galassi, M.D., and Bastien, S. The College Self-expression Scale: A measure of assertiveness. Behavior Therapy, 1974, 5, 165-171.

Galassi, J.P., and Galassi, M.D. Validity of a measure of assertiveness. Journal of Counseling Psychology, 1974, 21, 248-250.

Galassi, J.P., Galassi, M.D., and Litz, M.C. Assertive training in groups using video feedback. Journal of Counseling Psychology, 1974, 21, 390-394.

Galassi, J.P., Kosta, M.P., and Galassi, M.D. Assertive training: A one-year follow-up. Journal of Counseling Psychology, 1975, 22, 451-452.

Gambrill, E.D., and Richey, C.A. An assertion inventory for use in assessment and research. Behavior Therapy, 1975, 6, 550-561.

Glueck, B.C., and Stroebel, C.F. Biofeedback and meditation in the treatment of psychiatric illness. Comprehensive Psychiatry, 1975, 16, 303-321.

Hedquist, F.J., and Weinhold, B.K. Behavioral group counseling with socially anxious and unassertive college students. Journal of Counseling Psychology, 1970, 17, 237-242.

Hjelle, L.A. Transcendental meditation and psychological health. Perceptual and Motor Skills, 1974, 39, 623-628.

Huck, S.W., and McLean, R.A. Using a repeated measures ANOVA to analyze the data from a pretest-posttest design: A potentially confusing task. Psychological Bulletin, 1975, 82, 511-518.

Lieberman, M.A., Yalom, I.D., and Miles, M.B. Encounter groups: First facts. New York: Basic Books, 1973.

McFall, R.M., and Marston, A.R. An experimental investigation of behavior rehearsal in assertive training. Journal of Abnormal Psychology, 1970, 76, 295-303.

Nidich, S., Seeman, W., and Dreskin, T. Influence of transcendental meditation: A replication. Journal of Counseling Psychology, 1973, 20, 565-566.

Orme-Johnson, D.W. Autonomic stability and transcendental meditation. Psychosomatic Medicine, 1973, 35, 341-349.

Percell, L.P., Berwick, P.T., and Beigel, A. The effects of assertive training on self-concept and anxiety. Archives of General Psychiatry, 1974, 31, 502-504.

Rathus, S.A. An experimental investigation of assertive training in a group setting. Journal of Behavior Therapy and Experimental Psychiatry, 1972, 3, 81-86.

Seeman, W., Nidich, S., and Banta, T. Influence of transcendental meditation on a measure of self-actualization. Journal of Counseling Psychology, 1972, 19, 184-187.

Smith, J.C. Meditation as psychotherapy: A review of the literature. Psychological Bulletin, 1975, 82, 558-564.

Wallace, R.K. Physiological effects of transcendental meditation. Science, 1970, 167, 1751-1754.

Wallace, R.K., and Benson, H. The physiology of meditation. Scientific American, 1972, 226, 84-90.

Wallace, R.K., Benson, H., and Wilson, A.F. A wakeful hypometabolic physiologic state. American Journal of Physiology, 1971, 221, 795-799.